



# Modeling Deception in Computer Simulations

Luke Johnson  
Perryville High School  
U.S. Army Research  
Mentorship Program  
Drs. John Brand  
August 2004



# Outline

- Deception
- Objective
- OneSAF
- JWARS
- EINSTEIN
- Conclusion



# Deception

***Deception is the art of controlling perceptions so that incomplete or incorrect knowledge results..."***

**- Bevilacqua Research Corporation**





# Objective

To research and find an accepted military simulation that could be used to model deception.

Warfare has deception.

Warfare simulations should too.

## Top Three Simulations





## Primary Developer

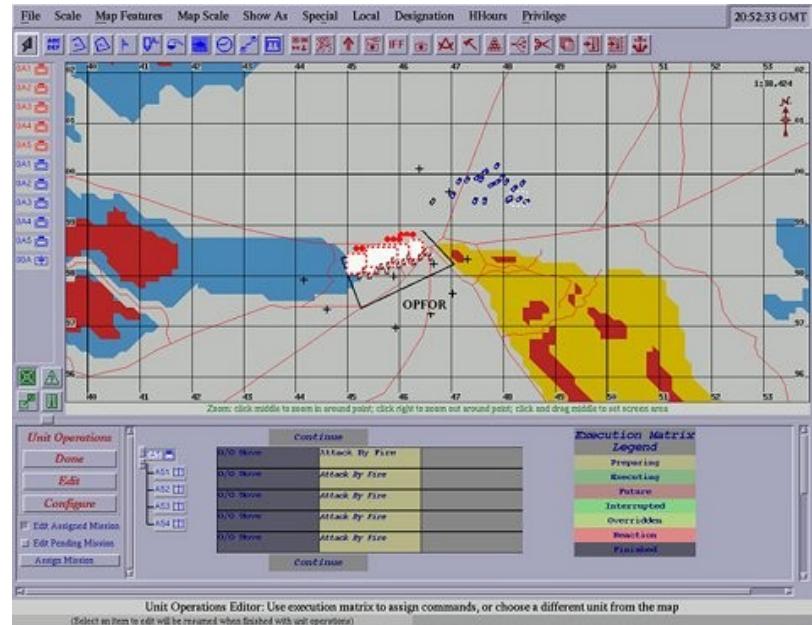
PEO STRI

## Why OneSAF

Availability of Software  
Availability of Experienced Users

## OneSAF's Objective

To provide a simulation to span the three army domains: **T**raining, **E**xercises, and **M**ilitary **O**perations (TEMPO)



A screenshot of OneSAF

## Problems

Lacks the necessary flexibility



## Primary Developer

CACI International, Inc



## Why JWARS

Accepted by Scientific Community  
Has features that allow communication

### Capabilities

Test war plans and doctrines  
Conduct force assessment  
Direct Campaign planning  
Determine the mix of weapons and forces

### Problems

Battalion and above  
Requires extensive amounts of time to operate  
Could not readily obtain software



# EINSTEin

*Enhanced ISAAC Neural Simulation Tool*  
(ISAAC = *Irreducible Semi-Autonomous Adaptive Combat*)

## Primary Developer

Center of Naval Analyses (CNA)

## Why EINSTEin

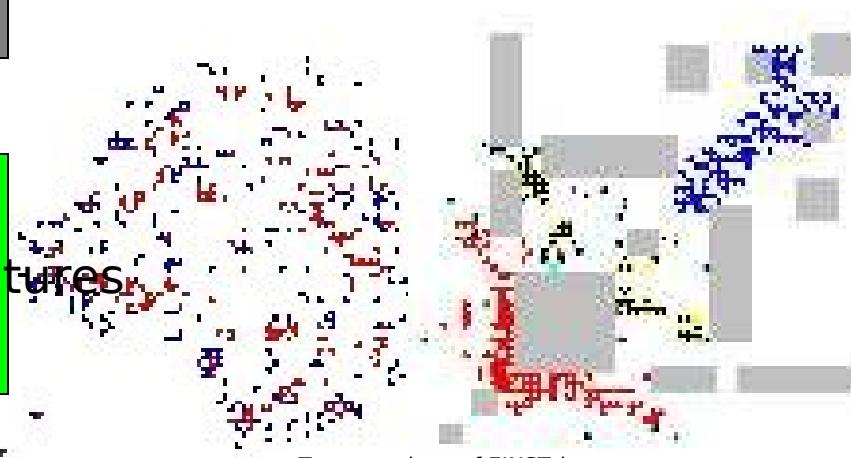
Availability of Software  
Simplicity

## Capabilities

Discover emergent properties  
Explore Command & Control (C2) structures  
Assess the value of information

## Problems

Was not designed to run specific tactical scenarios





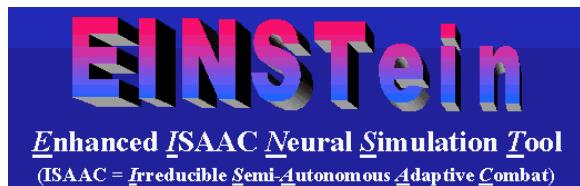
# Conclusion



OneSAF does not have the capability to model deception.



Further investigation into JWARS's potential for deception is warranted.



Further investigation into EINSTEin's potential for deception is warranted.